

INSTRUCTION LEAFLET FOR 'MULTOR'

ARE YOU CONSIDERING A TRIP TO AUSTRIA?

All **currency exchange rates** can be read from your Multor without any calculating work—as from a table.

For instance: 1 shilling (English) equals 3.6 Austrian Schillings. Look up number 1 of the **small disc** and move it clockwise until it covers 3.6 of the **large disc**. That is all!

All values on the small disc represent Sterling amounts and the corresponding amounts of Austrian Schillings are already shown by the corresponding values on the large disc.

Small disc:
1 English Shilling = 3.60 Austrian Schillings
5 English Shillings = 18 Austrian Schillings
8 English Shillings = 28.80 Austrian Schillings

But it works as well the other way round:

Large disc:
You spend: 45 Austrian Schillings = 12.5 English Shillings
36 Austrian Schillings = 10 English Shillings
27 Austrian Schillings = 7.5 English Shillings

Total 108 Austrian Schillings = 30 English Currency.
For practise: Try it with Canadian Dollars 1 U.S. \$ = 0.98 Can. \$ with Swiss Franc 1 U.S. \$ = 4.10 sfr.

A LITTLE THEORY

1. The Multor consists of two discs and the transparent index, by turning the discs the calculations are performed **automatically**, all you have to do is just **read the results**.

2. The merchant calculates **only with the partition along the touching line** of the two discs (the main partition). The lower partition on the small disc serves the technician for calculating **squares, roots, and so on**.

3. The Multor does not show zeros and decimal points. Therefore, when adjusting the discs, leave out zeros and decimal points. For instance, the adjustment for 327 000 is 327, for 0.45 is 45, and so on.

4. **Important!** The **big ciphers** from 1 to 9 design the nine parts of the Multor which are distributed around the discs.

The **minor ciphers** to the right of number 1 design the tenths, that is 1.1, 1.2 and up to 1.9. In all the other parts of the partition, these tenths are marked by longer lines, every fifth mark being slightly thicker.

5. In the different ranges of the colours the marks have different values. In the **yellow** part each mark is 1; in the **white** part each mark is 2; in the **green** part each mark is 5.

6. The transparent index serves for fixing numbers or results when adjusting the discs or reading the results.

7. **The multiplication:** If you move number 1 of the **small disc** under any number of the **large disc**, you have multiplied this number **automatically** and **simultaneously** with all numbers of the **small disc**, the results being shown correspondingly **above** these numbers on the **large disc**. With the number 1 pointing to 6 you can make the following readings: (to the left) $6 \times 8 = 48$, $6 \times 6 = 36$ and so on (to the right) $6 \times 12 = 72$, $6 \times 13 = 78$, and so on.

8. **The division:** All numbers of the large disc are divided **automatically** and **simultaneously** by the numbers, which are just below them on the **small disc** (the same position as when written as a fraction). **The result is shown by the number 1 of the small disc**. For instance, we adjust

8 large disc and so on, are
3 3.5 4 divided simul-
1.5 1.75 2 taneously by
4 small disc each other.

The result in each case is 2 (above the 1 in triangle).

A FEW PRACTICAL RULES

1. As you can see, you can work with the Multor without any preliminary knowledge, but the more you **practise** the more pleasure and success you will have.

2. The number 1 under a number = **multiplication**.

3. Two numbers under one another (as with a fraction) = **division**. The result is shown by the number 1 in triangle.

4. Beginning from number 1 of the **small disc** to the **right** are percentages **added**, to the left are percentages **subtracted**.

5. Do not confuse the **minor ciphers** at the **right** of number 1 (which indicate the tenths of number 1) with the **big ciphers** around the whole circumference of the disc.

6. Mind the different **values** of the marks in the 3 ranges of the colours.

7. Once you have chosen one disc for one kind of values, stick to it! **For instance**, quantities on one disc and prices on the other, the same with miles and gallons, Austrian Schillings and Dollars, percentages and capitals, and so on. One kind of values stays **unchanged on one disc** during the whole procedure of the calculation.

8. With this short instruction note, only a minor part of the performance and the versatile applicability of this practical device is shown.

PERCENTAGE OF THE RETAIL PRICE

("from top") give occasionally headaches in practice.

On the base of a given purchase price, we ask for the **retail price** in which a profit of 20% should be included (20% of the retail price and not of the purchase price). If, for instance, the retail price was 100 the corresponding purchase price would be 80.— (100 minus 20% = 80). (In case the profit should be 30% 70.— with 25% 75.—, and so on.)

We put number 1 in triangle of the **small disc** (= 100%) under big cipher 8 (= 80%) of the large disc. With this adjustment, the Multor gives you a **complete table** showing the **purchase prices** (large disc) and the corresponding retail prices (small disc) in which a profit of 20% "from top" is already included.

Therefore We can read:
purchase 8 = 10.— retail
purchase 6 = 7.50 retail
purchase 40 = 50.— retail, and so on.

With this adjustment we note, that number 1 of the **large disc** covers the 25th mark of the **small disc** to the right of its number 1 (25%). This shows **immediately** that 20% "from top" are equal to 25% "from bottom."

PERCENTAGE CALCULATORS ARE SIMPLE MULTIPLICATIONS.

The same thing applies for subtracting.

Let us suppose you intend to give a discount of 10% on your invoice which, for instance, amounts to £200.

This time, you go from number 1 of the small disc to the left. Your final invoice with a

discount of 10% (100% minus 10% = 90%) will be £180
discount of 20% (100% minus 20% = 80%) will be £160

With **one single adjustment**, the Multor shows you automatically and simultaneously: the values of any percentages, the amounts with percentages added and the amounts with percentages subtracted of any amount on the large disc to which the triangle of the small disc is pointing.

ALL PERCENTAGES are found by the Multor very easily:

Move number 1 of the **small disc** (in triangle) under the value of which you want to know the percentage on the **large disc**. This is all you have to do! For instance: You wish to know different percentages of £200. Look up big cipher 2 of the large disc (20%) the Multor does not show zeros) and move number of the **small disc** underneath. Whatever percentage you look up along the whole circumference of the small disc, the corresponding result is given on the large disc.

Small disc: 7% = £14
3% = £6
Large disc:

Quite simple. But with the same adjustment you find much more!

PERCENTAGES IN ADDITION TO A BASIC PRICE:

The adjustment of the Multor remains the same as before = number 1 of the **small disc** covers big cipher 2 of the large disc, which, in our case, stands for £200, as the Multor does not show zeros.

Let us suppose you want to add 10% to these £200.

On the small disc, beginning from the number 1 to the right, each mark means 1 additional per cent to the original sum. So when adding 10% to the original purchase price the retail price is 100% plus 10% = 110%. The Multor shows £220 on large disc over the 110 (1.1) of the small disc.

Further examples: Small disc: Large disc:
You add 12% (100% plus 12% = 112%) = £224
You add 20% (100% plus 20% = 120%) = £240

FUEL CONSUMPTION

It surely interests you to know how many miles your car does to the gallon.

At the end of a month, for instance, we note that we have bought 75 gallons of fuel and the mileage counter shows us that we have covered 3,000 miles within the same space of time.

You put the miles on the large disc and the gallons below on the small disc, like with a fraction miles/gallons, because you are looking for a result in "miles per gallon."

Look up large disc big cipher 3 (3 = 3,000 miles) and put small disc 75 (= 75 gallons) below. Number 1 of the small disc shows you the result. The fuel consumption of your car was 40 m.p.g. But with the same adjustment, the Multor shows you even more. It gives you a complete table of distances and the corresponding fuel consumption. The distances are on the large disc and the necessary quantity of fuel to cover the distance is below on the small disc.

For instance: for 50 miles 1.25 gallons.
for 280 miles 7 gallons.

The fuel calculation is a simple division.